

**THAT WHICH IS CLAIMED IS:**

1. A driver circuit (10) for driving a power element (11) connected to an inductive load (12), of the type comprising at least a first current generator (GL), connected between a voltage reference (VDD) and an output terminal (OUT) of said driver circuit (10), and adapted to supply a first charge current ( $I_{low}$ ) to a control terminal (G11) of said power element (11), in turn connected to said output terminal (OUT), characterized in that it further comprises at least a second current generator (GH) connected, in parallel with said first current generator (GL), between said voltage reference (VDD) and said output terminal (OUT) and adapted to provide said control terminal (G11) with a second charge current ( $I_{high}$ ) dependent on a voltage value ( $V_c$ ) present at said input terminal (IN), said input terminal being connected to a conduction terminal (C11) of said power element (11).

2. A driver circuit (10) according to Claim 1, characterized in that said second current generator (GH) is connected to said output terminal (OUT) through a switch (SW) having a drive terminal connected to said input terminal (IN) by a voltage sense-and-compare means (13,14).

3. A driver circuit (10) according to Claim 2, characterized in that said voltage sense-and-compare means (13,14) comprises at least one sensing block (13) and one voltage comparator (14) cascade connected together between said input terminal (IN) and said drive terminal of said switch (SW).

4. A driver circuit (10) according to Claim 3, characterized in that said sensing block (13) has an output terminal connected to a first input terminal

5 (+) of said voltage comparator (14), and that said voltage comparator (14) has a second input terminal (-) connected to an internal voltage reference (Vref) and has an output terminal (O14) connected to said drive terminal of said switch (SW).

5. A driver circuit (10) according to Claim 1, characterized in that first (Ilow) and second (Ihigh) charge currents have different values.

6. A driver circuit (10) according to Claim 5, characterized in that said first charge current (Ilow) is smaller than said second charge current (Ihigh).

7. A driver circuit (10) according to Claim 6, characterized in that said voltage sense-and-compare means (13,14) opens said switch (SW) and disconnect said second generator (GH) from said output terminal (OUT) upon said voltage value (Vc) on said input terminal (IN) beginning to fall, thereby enabling a phase of charging said control terminal (G11) of said power element (11) with said small charge current (Ilow) only when said power element (11) initiates a turn-on phase.

8. A driver circuit (10) according to Claim 3, characterized in that said sensing block (13) differentiates said voltage value (Vc) on said input terminal (IN).

9. A driver circuit (10) according to Claim 8, characterized in that said sensing block (13) comprises a junction capacitor (CG) of a high-voltage integrated diode.

10. A driver circuit (10) according to Claim

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1, characterized in that said first and second current  
generators (GL,GH) respectively comprise first (Q1)  
and second (Q2) transistors having first conduction  
5 terminals connected through first (R1) and second (R2)  
resistors, respectively, to said voltage reference  
(VDD), second conduction terminals connected to said  
output terminal (OUT), and control terminals connected  
through respective first (Q3) and second (Q9) enable  
10 transistors to an enable terminal (TA) of said driver  
circuit (10).

11. A driver circuit (10) according to Claim  
1, characterized in that said switch (SW) comprises at  
least one transistor (Q10), being connected to said  
voltage reference (VDD) and having a control terminal  
5 connected to said output terminal (O14) of said  
voltage comparator (14).

12. A driver circuit (10) according to Claim  
11, characterized in that said switch (SW) further  
comprises an additional transistor (Q10') having a  
conduction terminal connected to said voltage  
5 reference (VDD), a control terminal connected to a  
conduction terminal of said transistor (Q10), and a  
second conduction terminal connected to said second  
generator (GH) through a mirror transistor (Q8).

13. A driver circuit (10) according to Claim  
1, characterized in that it comprises an internal  
generator (29) generating said internal voltage  
reference (Vref) and being connected to said voltage  
5 reference (VDD), with an output terminal of said  
internal generator being connected to said second  
input terminal of said voltage comparator (14).

14. A driver circuit (10) according to Claim  
1, characterized in that said power element (11) is an

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IGBT transistor, and that said conduction terminal  
(C11) is a collector terminal of said IGBT transistor.

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